

# The CENTRAL AFRICAN JOURNAL OF MEDICINE

BY DAVID LIVINGSTONE

Vol. 1. No. 3

SEPTEMBER, 1955

## CONTENTS

### ORIGINAL ARTICLES

The Art of Diagnosis	<i>D. Hunter</i> - - - - -	207
Tetanus Neonatorum Treated with Chlorpromazine	<i>M. Gelfand</i> - - - - -	216
Volvulus of the Stomach	<i>W. Shepherd Wilson</i> - - -	218
Blackwater Fever in an African Child	<i>H. F. Theron</i> - - - - -	220
Africa, But Not So Dark	<i>W. Robertson</i> - - - - -	221
Chemotherapy in Pulmonary Tuberculosis	<i>A. I. L. Turnbull</i> - - - -	228
Pulmonary Haemosiderosis	<i>J. R. Harries</i> - - - - -	235
Impending Coronary Thrombosis	<i>A. Divaris</i> - - - - -	239
The Right Base	<i>T. Fane Tierney</i> - - - -	243
African Vital Statistics	<i>J. R. H. Shaul</i> - - - - -	246
The Management of Syphilis	<i>R. R. Willcox</i> - - - - -	250
The Nganga	<i>M. Gelfand</i> - - - - -	255

### EDITORIALS

Rugby Football Injuries		259
The Age of Retirement		261
The Quack		262
Correspondence - - - - -	263	
The Journal Library - - - - -	264	
Banquet in Honour of Lord Malvern and Professor Drennan - - -	266	
Annual Congress of the Medical Association of S. Rhodesia - -	267	

PUBLISHED BI-MONTHLY, ANNUAL SUBSCRIPTION £2 2s. 0d.

## Three Cases of Tetanus Neonatorum

SUCCESSFULLY TREATED WITH CHLORPROMAZINE, TETANUS ANTISERUM AND PENICILLIN

BY

MICHAEL GELFAND, O.B.E., M.D., F.R.C.P.,  
*Consulting Physician, Salisbury African Hospital.*

Although I have seen many cases of tetanus neonatorum admitted to the Salisbury African Hospital, it was exceptional for one to recover despite the various treatments adopted. I have not used curare and other muscle relaxants, but relied mostly on tetanus antiserum usually given by the intramuscular route and occasionally intrathecally or intravenously. In addition, sedatives were administered and more recently antibiotics, but the results were invariably disappointing.

It is known that tetanus assumes a far more serious form in the infant than in the adult. Jelliffe (1952) in Nigeria and Slome (1954) from South Africa report on its seriousness, but they do not provide figures of the mortality rate in the new-born. The reason for the bad outlook in tetanus in the new-born may be because of its short incubation period. Most of the cases that I have seen occur on about the sixth or seventh day after birth. Bodman (1954) has shown that the prognosis of tetanus is extremely poor where the incubation period is less than eight days.

The method of delivery by the African midwife accounts for the frequency with which tetanus neonatorum is met. After the placenta has separated from the uterus, the cord is cut with any sharp instrument such as a knife, blade, razor or reed. It is not sterilised and is simply kept by the midwife along with her other utensils, and it is not surprising, therefore, that dirt and spores are introduced on to the cord.

On learning that chlorpromazine hydrochloride (Largactil) influences nervous activity in man both centrally and peripherally, and that experimentally in animals it shows an antagonism to the effects of certain central convulsants, such as nicotine, I decided to determine its efficacy in tetanus.

In this paper I am reporting three successes out of nine cases treated with Largactil during the last three months, and, since recovery had previously been exceptional in my hands, I believe these findings worthy of publication with

the hope that others may use it and report their results.

### ILLUSTRATIVE CASES

*Case 1.*—Mutindiza was a male baby born at his mother's home. After the placenta was expelled the cord was tied with cotton and cut with a razor, and no dressing was applied. The child was perfectly well and sucked satisfactorily for the first six days, after which he began to develop stiffness of the limbs, trunk and neck. The rigidity increased so rapidly that by the next day the infant could be held up by one of his arms without being able to flex any part. His back was arched forwards and neck thrown backwards. The least stimulus, noise or touch provoked a series of generalised twitchings. He could not suck. He was so stiff that no lumbar puncture could be done and the mouth could not be opened beyond a few millimetres.

From the umbilical site a dirty greyish discharge issued. The child was well-nourished and did not show any evidence of anaemia. His temperature on admission was 101° F. The anterior fontanelle did not bulge. The heart was not enlarged and the lungs were clear on X-ray. The respirations were mainly abdominal in type and no oedema was present. The urine was clear of albumin and sugar.

The child was desperately ill when on 7th April, 1955, treatment was started. It consisted of 40,000 units of tetanus antiserum (A.T.S.) intramuscularly b.d. and Largactil (diluted three times with normal saline) 25 mg. b.d. intramuscularly. In addition, 300,000 units of procaine penicillin were given each day. All were continued in these dosages until 13th April, when the child began to show distinct signs of recovery. By the third day after treatment the spasms had mostly ceased, although generalised stiffness was still marked and the infant's back was arched forward. The stiffness passed off very slowly. On the 21st April the facial muscles had become less stiff, and by 2nd May he was able to suck. Before that he could only be fed from a spoon with expressed breast milk, which was later (18th April) changed to half strength cow's milk, as insufficient breast milk was available. By the 4th May the baby was able to suck from the mother's breast, when the milk flow was re-established under the stimulus of sucking. The fever lasted five days—the first and second days it was 101° F., but after that it rapidly returned to normal.

The infant began to put on weight. We could no longer persuade the mother to stay in hospital and she left on the 12th May. Three weeks later the mother brought the child to hospital to report progress, and we were delighted with his recovery. The stiffness had almost completely cleared.

*Case 2.*—Manwera, a male African infant aged seven days, was admitted to the Salisbury African Hospital on the 4th June, 1955. He was born in primitive surroundings on a farm near Salisbury, being the third child. The delivery was normal and the umbilical cord was cut by a Native midwife with a razor and tied with cotton. The baby sucked well until it became ill, when the first symptoms were cough and inability to suck. On admission, the infant had the typical appearance of tetanus, with numerous and frequent spasms of the facial and limb muscles. Between spasms the whole musculature was stiff. Any noise near the baby or a touch of the hand would provoke a series of spasms. The umbilical cord was septic. The temperature was 101° F., but on the second day it had

returned to normal and remained so. The anterior fontanelle was a little sunken. There was no sign of anaemia and the lungs were clear.

The treatment adopted remained unchanged for six days, after which it was withdrawn. It consisted of 40,000 units of A.T.S. twice a day and 300,000 units procaine penicillin once daily. These were given intramuscularly.

The infant was unable to suck and the mother fed it with expressed breast milk from a spoon. On 5th June the infant still quivered at the slightest stimulus and no improvement could be noted, but by the next day it showed signs of improvement. This progress was maintained the following day. On the 10th June the baby was definitely on the way to recovery, although generalised rigidity was still present. Nevertheless it could be touched without producing convulsive or twitching movements. On the seventh day it was decided to withhold all treatment as the spasms had ceased, although the generalised stiffness had persisted. The following day (11th June) the infant emitted a few cries for the first time since this illness. On the 12th June the mother absconded with the child and returned to the farm, where no other treatment was given. The infant was seen one month later by a nearby doctor, who reported that he had fully recovered.

**Case 3.**—A female infant was brought into hospital with tetanus. She was six days old when the mother noticed she could no longer suck, cried readily and soon after developed spasms. On admission to hospital the baby was completely rigid. The whole body was fixed and could be lifted in one piece. Spasms were frequent and the infant was seriously ill. The temperature was 100.4° F., but it soon returned to normal. The umbilical cord was septic and a blackish liquid discharge exuded from it. The slightest noise provoked an attack of spasms. The lungs were clear on X-ray and the heart was normal.

The infant was put on the following regime: A.T.S. 40,000 units twice daily as well as chlorpromazine 35 mg. b.d. by intramuscular injection for five days. After this the A.T.S. (40,000 units) and Largactil (35 mg.) were given once daily, as by then the child was clearly recovering and a reduction of the dose seemed justifiable. The spasms gradually diminished and were much reduced by the eighth day. On the sixth day the infant was able to suck from a bottle, whereas before it had to be fed directly from a spoon. By the twelfth day she was sucking well and was beginning to put on weight. The next day the mother disappeared with her baby and trace of both was lost.

### DISCUSSION

I am not certain how often chlorpromazine has been employed in the treatment of tetanus. So far, I have read of one case of tetanus in which it was used. Andersen, Johansen and Mouys (1955) report a case of severe tetanus in a Danish child aged 10 years who was treated

for three weeks with chlorpromazine and tubocurarine. The outcome was fatal, the authors being unable to report any control of the convulsive attacks. They used chlorpromazine because they found experimentally in animals that it was a very effective agent in controlling convulsions in animals showing localised tetanus.

The prognosis of adult tetanus is much better than that in the new-born, and antiserum alone often effects a cure in the former. In the infant, however, antiserum alone is most disappointing and therefore Largactil deserves a fuller trial. Treatment should be continued for as long as the spasms are present, but as soon as they cease both the Largactil and antiserum may be tapered off or stopped. I have observed that the stiffness takes many days—often weeks—to pass off, an interesting feature of which I was not previously aware. Two useful signs denoting probable recovery are a return of the sucking reflex and disappearance of the spasms.

### SUMMARY

1. Three African cases of tetanus neonatorum, who recovered after chlorpromazine, tetanus antiserum and penicillin had been given, are described.

2. As this is a disease which usually carries a grave prognosis, it is suggested that chlorpromazine be tried.

3. Prior to employing chlorpromazine, it was exceptional to meet with a recovery, and three out of nine cases having survived is encouraging, and with further experience it may be possible to arrive at an optimum dosage.

### Acknowledgment

I wish to thank Dr. R. M. Morris, O.B.E., Federal Secretary of Health, for permission to publish this paper.

### REFERENCES

- ANDERSEN, W. E., JOHANSEN, S. H. & HOUGS, W. (1955). *Danish Med. Bull.*, 2, 84.
- BODMAN, R. J. (1954). *Lancet*, 2, 1234.
- JELLIFFE, D. B. (1952). *Trans. Roy. Soc. Trop. Med. and Hyg.*, 46, 13.
- SLOME, R. (1954). *S. Afr. Med. J.*, 28, 473.



This work is licensed under a  
Creative Commons  
Attribution – NonCommercial - NoDerivs 3.0 License.

To view a copy of the license please see:  
<http://creativecommons.org/licenses/by-nc-nd/3.0/>

This is a download from the BLDS Digital Library on OpenDocs  
<http://opendocs.ids.ac.uk/opendocs/>